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PEDIATRICS

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Report of Eight Cases Treated with Gude's Pepto-Mangan.

See MEDICAL RECORD, June 3, 1893, page 695.

CASE I.—D. G——, female, aged seventy-eight, entered Bellevue Hospital suffering with pelvic cellulitis, the symptoms of which disappeared at the end of a week. The patient was fairly well nourished, but with an excessively pale, waxy color. Examination of blood showed eight per cent of hæmoglobin and 3,900,000 corpuscles to a cubic millimetre. After thirty-four days taking the preparation the amount of hæmoglobin had increased to eleven per cent, and the corpuscles to 4,800,000.

CASE II.—E. W——, aged seventeen, had the most profound anæmia after recovering from a severe attack of scarlet fever. Examination of blood showed six and one half per cent hæmoglobin, and 2,533,000 corpuscles to a cubic millimetre. After taking the preparation forty days the amount of hæmoglobin had increased to ten per cent and the corpuscles to 4,500,000.

CASE III.—A. W——, female, aged twenty-two, had been excessively anæmic for over a year; complained of headaches, ringing in ears, dizziness, neuralgic pains, no organic lesion. Blood showed seven per cent hæmoglobin and 3,520,000 corpuscles to a cubic millimetre; the corpuscles themselves were changed, some being microcytes and poikilocytes. After twenty-three days the treatment was stopped, as the hæmoglobin was normal in amount and the corpuscles had increased to 5,000,000 to each cubic millimetre. The result in this case was the most pronounced of any.

CASE IV.—Charles M——, aged twenty-one, subacute pleurisy lasting six weeks, very anæmic; no fever, some loss in flesh. Had taken syr. ferri iodidi for a month, with but slight improvement in general appearance. Hæmoglobin eight and one half per cent; corpuscles 3,800,000 to each cubic millimetre. At the end of twenty days, when the treatment was stopped, the hæmoglobin had increased one and one half per cent, and the corpuscles to 4,600,000; the fluid in the chest had disappeared.

CASE V.—F. B——, female, aged twenty-two, was admitted to the hospital suffering from insufficiency of the mitral valve. Presented the pale and anæmic appearance seen in cardiac disease. After the patient had improved so that she was up and about the ward she was put on the pepto-mangan (Gude). The examination of the blood at that time showed eight and one half per cent of hæmoglobin and 2,600,000 corpuscles to the cubic millimetre. After taking the preparation twenty-five days the hæmoglobin was eleven per cent, and the corpuscles 4,000,000 per cubic millimetre.

CASE VI.—B. M——, aged twenty-four, suffering from primary anæmia and menstrual disturbances. No organic lesion. Hæmoglobin ten per cent, corpuscles 3,000,000 per cubic millimetre. After taking the preparation forty-three days the amount of hæmoglobin remained at ten per cent, but the corpuscles had increased 1,200,000 per cubic millimetre.

CASE VII.—C. V——, aged fifteen, presented the ordinary appearances of the anæmic girl at the age of puberty. No organic lesion. Hæmoglobin eight per cent, corpuscles 2,800,000. The examination of the blood after taking the pepto-mangan (Gude) forty days showed that the hæmoglobin was normal in amount, and that there were 4,000,000 corpuscles to each cubic millimetre of blood.

CASE VIII.—M. M——, female, aged twenty-four; six weeks after ovariotomy; presented a markedly anæmic appearance. Had shown a slight improvement in color after taking Blaud's pills for three weeks. These were stopped, and the iron and manganese preparation given. Examination of blood showed eight per cent hæmoglobin, and 3,200,000 corpuscles per cubic millimetre. After forty-eight days the hæmoglobin had increased two and a half per cent, and the corpuscles 1,300,000.

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JOHN H. RIPLEY, M.D.

PEDIATRICS

Vol. I. MARCH 15th, 1896. No. 6.

Obituary.

JOHN H. RIPLEY, M. D., NEW YORK.

Strange, is it not? that the myriads who
Before us pass'd the door of Darkness through,
Not one returns to tell us of the Road,
Which to discover we must travel too.

THE realization of the end of all earthly association with one whose intimate friendship was enjoyed for nearly a quarter of a century brings with it a shock that numbs the adequate expression of an overwhelming sorrow. The veil which drops between mortality and eternity leaves us with an inexpressible longing for another word, another look, another touch. The awe and mystery of death when thus emphasized assumes a new and thrilling significance which no philosophy can explain and no resignation can assuage. There was a something in the personality of Dr. Ripley giving such an impression of inherent strength, reserved vitality and assertive positiveness that his sudden taking off was more than an ordinary surprise. It was at a time when he was just preparing to enjoy the fruits of his arduous labors and to realize the well-earned rewards of his enviable professional distinction. There is now nothing left of him but his memory and the many lessons clustering around it of a well ordered and successful career. The tribute tendered to him in a journal of Pediatrics is a becoming recognition of his work in a specialty which commands the highest talents of the most accomplished physician. That he took a leading rank in that department is a proof of his superior qualifications as a well-educated all-round family physician. Indeed, he represented the general practitioner in the broadest sense—a type which, unhappily, is now becoming extinct. His indefatigable industry, his extended opportunities for clinical study, his careful pathological investigations, and his thoroughness in mastering essential details made him equally at home in the sick room of a child or adult, and always ready for any emergency, medical or surgical. His acknowledged abilities along these varied lines commanded for him an ex-

tensive consultation practice and brought him in frequent contact with the leading specialists in all the different branches. His profound and accurate knowledge of general pathology often served him in differing in opinion from his colleagues, and he not infrequently was in the minority in maintaining opposite views and in valiantly vanquishing his opponents. Careful and painstaking in the examination of a case, he was always positive in his opinion when the diagnosis was made. Although abreast of the advances in medicine and surgery he was always judiciously conservative in indorsing radical or untried methods of treatment. His successful career demonstrated the real value of work when combined with talent, as his was a struggle against odds from the beginning. During his student days he supported himself by teaching a district school in Connecticut, and finally was enabled by the same means to pay his way through medical college and eventually establish himself in a metropolitan practice. It was this early training that made him the successful teacher in the hospital ward, and not only schooled his mind to the real necessities of the student but laid that foundation for skill in diagnosis which he possessed in an eminently demonstrative degree. His writings, although not numerous, were of a thoroughly practical character and from the start won for him the reputation of an accurate observer and logical thinker. His most important contributions to Pediatrics were articles on scarlatinal nephritis and its complications, and the treatment of croup by tracheotomy, both of which were largely quoted and duly accepted as authoritative.

During the most of his professional life he was devoted to hospital practice, holding positions of Attending Surgeon to Charity Hospital, Attending Physician to St. Francis Hospital, Consulting Physician to the Hospital for Ruptured and Crippled and to the St. Joseph's Hospital. A member of all the leading medical societies he was, in the earlier and less busy part of his career, a constant attendant on their meetings and an active participator in their proceedings.

Essentially a man who had become inured to the discipline of antagonistic conditions, he was naturally self-reliant, and being severely honest with himself always strove to be equally so with others.

We thus briefly sketch a life that commenced in May 16, 1837, and ended Feb. 15, 1896. Not much of a compass when measured in years, but making in itself a little history of patient work and enduring ardor that brings the well-merited rewards for highest duties well performed and most valuable services faithfully rendered.

GEO. F. SHRADY, M. D.

Original Articles.

CRANIOTOMY FOR IDIOCY AND IMBECILITY.*

By Charles L. Dana, M. D.,

Professor of Diseases of the Mind and Nervous System in the N. Y. Post-Graduate Medical School, and Physician to Bellevue Hospital.

THE subject assigned to me in this discussion is that of the Value of Craniotomy and its Indications in Conditions of Idiocy and Imbecility. I undertook to say something upon this subject for the reason that I had a year ago begun to collect and study my own personal experiences in the matter. Last spring I put these into the form of an article, which recently appeared in the *American Journal of the Medical Sciences*, for January, 1896. This article, though written nearly nine months ago, still embodies essentially my views upon this subject. In it I collected a list of 70 cases, excluding Lannelongue's, and made an analysis of them. I found that there were 29 improved, 19 not improved, and 22 deaths. Leaving out many of the old cases, which did not represent truly the present surgical results, I found that out of 22 selected cases there were 6 improved, 10 non-improved, and 6 deaths. These figures conform to my own personal experience in 14 cases, for among these there were 3 improved, 8 not improved, and 3 deaths. Since the writing of my article I have collected a number of other cases, 11 in all, making a total of 81. They are the following

1. *Boy, congenital idiot, microcephalus*, age? Five operations were done but there was no improvement. The absence of statements about age and other details makes the case of little value.—*Shuttleworth, Brit. Med. Journ., 1895.*

2. *Child, syphilitic imbecility.* Operation, much improved. Reported at a meeting of the British Medical Association, July, 1895. I cannot find the detailed report.—Dr. Shuttleworth, *Brit. Med. Journal, 1895.*

3. *Boy*, 6 months, *microcephalus.* Operation was done but no improvement followed.—T. Ulmanns, *Verhand, der deutsch. Gesellsch. f. Chirurg., xxiii, Kongress, 1894.*

4. *Girl*, 8½ weeks. Operation, death.—T. Ulmanns, *loc-cit.*

5. *Boy*, 4½ years, *microcephalic idiot, epilepsy.* Two operations

* Read at a meeting of the New York State Medical Society, Jan. 29, 1896.

were made and followed by marked improvement 5 months later.—C. Parkhill, Denver, Colorado.

6. *Girl*, 5¾ years, *megalocephalic idiot, thick skull.* Improvement followed the operation, reported a few weeks later.—*Ibid.*

7. *Girl*, 4 years, *acquired imbecility from meningitis when 8 months old.* Operation was followed by death.—J. F. Binnie, Kansas City.

8. *Boy*, 12 years, *congenital idiocy.* He had had fits and could not walk, but was not microcephalic. Two operations were done and improvement followed.—*Ibid.*

9. *Boy*, age 14 years, *imbecile, moral perversion, no paralysis or epilepsy.* Operation was followed by great moral and some mental and physical improvement, which set in 6 weeks later; present at end of year.—A. Spanock, *Neurol. Centralblat, 1895, p. 802.*

10. Similar case, but improvement followed trephining.—Wiegand, quoted in *Kraff-Ebings' Psychiatrii.*

11. *Child*, 8 years, *idiot.* Operation was done but no improvement followed.—R. J. Hall, *Amer. Journ. Med. Sciences, Dec., 1895.*

Among the foregoing 11 cases there were 6 improved, 3 not improved, and 2 deaths. The statistics for the 81 cases are, therefore, improved, 35; not improved, 22; deaths, 24.

This gives a much larger percentage of improvements than I believe really exists, nevertheless there is testimony from all parts of the world that a small percentage of idiots operated upon are benefited. Assumed this fact to be established, there are several questions that at once arise:

1. What class of cases is it that are thus benefited?

2. How much are they benefited, and in what direction?

3. What is the kind of operation which secures the benefit?

4. What are the dangers of the operation? for this latter fact is always to be considered in presenting the case to the parents.

5. Finally, how does the operation act?

In answer to the first question, as to the class of cases most benefited, it seems to me that there are two kinds of idiots and imbeciles whom we may subject to the operation with some expectation of getting help. One of them is the congenital idiots—children whose defect is due to some disturbance in the evolution of the brain before birth, and not to any accident, such as hemorrhage or embolism or trauma or inflammation after birth. This class have, as a rule, small heads. They are not, however, always microcephalic cases. Their heads measure, on an average, one to two centimetres less than that of the normal child. Thus,

MEDICAL CHRONICLE
ONE IS CALLED

the great circumference at two years, which is, normally, about 47½ centimetres, in these genitous idiots is 46 centimetres. Congenital idiots in whom the mental defect is associated with a double paraplegia, as well as cases of cerebral diplegia or birth-palsy, are not, in my experience, benefited, though my friend, Dr. Conway, states that he has seen one such case. The cases of idiocy associated with hemiplegia and epilepsy in children are not good subjects for the operation. When, however, epilepsy is associated with a congenital idiocy, it is not a contra indication.

The second class of cases in which benefit is occasionally reported is one in which there is perhaps a less marked mental defect, in which the patients are imbeciles rather than idiots; in which also there is no great amount of bodily defect, the patients being able to walk, and, to some extent, help themselves. When such patients present striking moral defects, such as destructiveness, precocious sexual habits, sudden obsessions, and in general, are irritable, restless, and difficult to train and manage, improvement has been reported after surgical operation.

The age at which the operation should be begun in the case of patients of the first class, that is, genitous idiots and microcephalic children, should not be above four years, but in the moral imbeciles the operation is effective as late as the period of puberty.

The second point of interest is, as to how much such children are benefited. In all cases the improvement is never a cure; the patients are simply made more tractable, learn to speak better, to walk more perfectly, to swallow and take their food better, and, in general, they take a new start in mental and physical development. Idiots who were before unteachable, noisy, helpless, become capable of learning a little, of minding the directions given them, and of being more cleanly and manageable.

As regards the epilepsies, there is for a time, at least, a diminution of the fits, and sometimes they cease for a long period, but I am not aware of any positive evidence that the operation causes the epilepsy to abate entirely. We know that in some of these cases of epilepsy associated with idiocy, the convulsive attacks cease of their own accord.

As to the effect upon the moral imbeciles, the operation does not develop, to any brilliant extent, the elemental virtues. But it seems to make some more tractable, lessening the violence of their morbid impulses.

In this connection I should like to add the interesting fact communicated to me by one of the physicians to the Clinton Peniten-

tiary, that deep incisions through the scalp and periosteum have been found to produce a decided moral improvement in some criminal cases.

As to the kind of operation which it is best to perform. In my own experience, the linear craniotomy, with lateral branches, has always been done, and that is the operation that has been performed by most others. Various modifications, such as cutting out large circular pieces from certain parts of the skull, and making the circular furrow around the top of the head, have been suggested, but I do not know of any special advantage that can be derived from them. As to the technical part of the operation I have nothing to say, except that the groove made in the skull should be a wide one and the removal of the bone should be liberally done. Furthermore, a second operation a few weeks or months after the first is often advisable. There seems to be no doubt that the results of the operation do not always appear in the first few months, but that after that time an improvement in the symptoms sets in.

As to the dangers of the operation, they have been rendered practically *nil* through the perfection in its technique, and I believe that special credit is due to Dr. Powell, whose methods have been so eminently successful in his work at the Post-Graduate Hospital. I do not know of any surgeon who has had such a small mortality rate. But with the instruments that he uses, and with the technique that he has devised, I see no reason why every one should not get the same results. So that, so far as the element of danger is concerned, it can be practically eliminated.

I want, in conclusion, to add one word as to the theory regarding its efficacy. The operation was originally devised on the theory that, by cutting open the skull of a microcephalic child, it gave an opportunity for the compressed brain to grow. This theory, which was never substantiated by any facts, and never held by any experienced neurologists, has been, of course, overthrown, though, to me, it has always seemed like overthrowing a man of straw. It is perfectly true that cutting open the skull does not remove any pressure or allow a hitherto confined cerebrum to expand; it does not in any measure change the condition of the brain which has been destroyed by cysts, apoplexies and scleroses. What the operation does do is this: It has a profoundly disciplinary effect upon the idiot. As I have said in my previous paper: These creatures are often not to be affected at all by ordinary educational methods; neither rewards nor punishments stimulate their effort or excite their attention. They cry, scream, and throw themselves about

without the slightest reference to anything that is said to them or done for them. The parents, as a rule, abandon themselves to despair and yield all their attention simply to gratifying the morbid displays of the imbecile child. I have known a mother to carry an idiot child about on her arm the whole day, only putting it down for a short interval for her meals or while the child was sleeping. This she kept up for more than a year, and at the same time did her housework, cooked, and arranged her table and looked after all the requirements of the home. As soon as the child was placed on the floor or in its crib, it inevitably set up a horrible and persistent screaming, which no amount of severe words or rigorous punishment would affect. In other cases the idiots or imbeciles which are found in institutions suffer, perhaps, from too much discipline and not enough personal attention and the lifting influence of bright and healthy children about him or her.

The operation of craniotomy upon children in institutions attracts the attention of the nurses and of the medical officers, and the children get more care and more stimulating words and help in various directions. I would repeat, therefore, that it is, in my opinion, largely through its pedagogic influence that an improvement in these cases takes place, and that the operation is allied in its effect to a severe piece of castigation. In the very low types of criminals it is a well-recognized fact by philanthropists that discipline and systematic work can only be obtained by actual corporeal punishment in many instances, for nothing else seems actually to appeal to them. In the very lowest grades of intelligence, such as we find in idiots and imbeciles, it is probable that only these very powerful inhibitory influences, such as accompany the performance of a capital operation, can affect materially the intellect of the child. It is through some such explanation as this that I would explain the fact that a second operation on these children may be of benefit.

To quote, further, the conclusion to which I arrived in my previous paper :

" The method by which improvement is brought about is largely a surgico-pedagogic one. All those who have had experience in educating idiots lay stress on the importance of special pedagogics, and craniotomy belongs, in a measure, to this class of therapeutic procedure. It may have some additional value by stimulating the circulation and nutritional activity of the brain."

This view of craniotomy for idiocy and imbecility lends itself readily to humor and those who wish may interpret me as intending to kill the operation by ridicule.

The moral effect of surgery upon patients, however, is a most important one, and I think is sometimes quite sufficient to justify even a serious operation. Dr. White has shown this most clearly in his very valuable article on the "Effect of Surgical Operations *Per Se*." It makes no difference how we do it. If in one case out of four or five, we succeed in making these wretched ones a little more intelligent, and render their care a little less of a burden to their parents, I think that we may well consider that we are justified even if we only play the role of pedagogue.

Infected Heirlooms.—An English bacteriologist has had the audacity to examine some beautiful old tapestries that have hung for generations upon the walls of a country mansion. He found them teeming with tubercle bacilli. What a blow this sort of thing would be to the possessors of old family relics if its force could be fully felt.—*Am. M.-S. Bull., 1896, ix, 159.*

Death Rate Among Insured Children.—The favorite argument of opponents of child insurance is, says the *Indicator*, that it leads to child murder, and if their statements were to be believed, there has been a heavy increase in mortality among children as a consequence of infantile insurance. They have, however, not only not been able to produce any reliable statistics in proof of this, but such statistics as have been available have all been against their theory. It has been shown in England, for example, that the death rate among the insured has been lower than among the uninsured, and some statistics recently collected by Frederick L. Hoffman, of New York, showing the death rate among children in the large cities of the United States, prove that the mortality among insured children is below the general rate. Mr. Hoffman is a statistical expert, and his figures can, therefore, be relied on. Here are his figures:

Ages.	Insured.	Total Deaths.
Between 1 and 2	61.55	62.78
Between 2 and 3	30.35	35.38
Between 3 and 4	20.35	23.62
Between 4 and 5	15.23	17.47
Between 5 and 6	11.85	11.20
Between 6 and 7	9.04	9.78
Between 7 and 8	6.92	8.99
Between 8 and 9	6.10	8.16
Between 9 and 10	5.40	7.39

—*Sanitarian, 1896, xxxvi, 121.*

DIPHTHÉRIE Á FORME PROLONGÉE.

By Arthur Stern, M. D., Elizabeth, N. J.

THIS particular form of diphtheria was first brought under general observation by Cadet de Gassicourt in 1883. Its literature is not extensive, the American text-books on children's diseases and the text-books of Eduard Henoch and Adolph Baginsky scarcely more than touching upon the subject. De Gassicourt, however, in his "Traité Clinique des Maladies de l' Enfance," treats the subject at great length and with exhaustive detail, and his reasonings and conclusions as there given will repay careful perusal.

Passing its more ephemeral developments, de Gassicourt observes that the chief differentiating characteristics of the disease—those distinguished by their invariable regularity—are, first, its unusually long duration, and, secondly, the relatively permanent character of the pseudo membranes during their presence. These peculiarities, he thinks, are attributable to the fact that on the one hand the infection is so mild as to be favorable to the slow progress of the disease, while on the other the tendency to sepsis and croup is very slight. He reports a number of interesting cases, the duration of some of which covered a period of forty-five days, and of others an even longer period.

Henoch dissents from this view, maintaining that the average duration of the disease is about two weeks, though he concedes that this period is very often exceeded in consequence of relapses and slowly healing ulcerations. He is of the opinion, however, that these irregularities are due to the cicatrization of the wounds. In an appendix to his work he refers to de Gassicourt's theory and observes that, in his opinion, the unusually long duration of the cases in question is due rather to a local predisposition of the mucous membrane to cumulative processes whose effects remain in evidence long after the infection has disappeared.

Baginsky says that the disease very often endures beyond its average time, and that he has observed cases where the pseudo membranes were present for over two weeks.

In "Clinical Studies," recently published by Heubner, 303 cases are reported which were treated with serum, of which one lasted 25 days, another 24 days, and a few others 17 to 20 days, the average duration being about 7 days. In the nature of things it is difficult to forecast the influence of antitoxin on these sub-acute cases of diphtheria, and it is therefore questionable whether "Diphthérie à Forme Prolongée" will be observed under the early use of the

serum; nevertheless, it would seem advisable that every case of this peculiar character should be reported with a view to collecting data sufficient for the study of its pathology.

This writing, indeed, is suggested by a case which recently came under my own observation. The patient was a boy of four years; had always been healthy, except, according to the mother's report, had suffered from "Dentitio Difficilis." I was called in the evening and found a temperature of 102, pulse 130, and the tonsils as well as the pharynx covered with pseudo membranes. I treated him with Loeffler's Solution (Menthol, Toluol, Liquor Ferri Sesquichloride, Alcohol). During treatment the membranes showed no change whatever, the pulse maintained an average of 120, temperature 100–101, and the tongue remained coated. From the 24th day in the 4th week the symptoms began to diminish and by the end of the same week had disappeared.

Considering the mild infection, I think the duration decidedly too long to permit of the ordinary classification of this case.

OPHTHALMIA NEONATORUM

By William Cheatham, M.D.,
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IN this short paper on Ophthalmia Neonatorum I will give only the treatment that has given me the most satisfaction: On first seeing a case of ophthalmia neonatorum, I warn all the attendants of the danger to their own eyes as well as to those of the patient. Some years ago I saw a grandmother lose both eyes as the result of inoculation from her grandchild, not having been warned of this danger, although the patient made a perfect recovery. On first seeing the case, I order (1) a saturated solution of boric acid, for frequent cleansing; (2) glyceride of tannin, ʒ i, aqua dest. q. s., ℥ i; (3) atropia sulph. gr. ss., saturated solution acid boric, ℥ ss., and (4) argent. nitrate gr. ii, gr. iv, or gr. vi, to aqua dest., ℥ ss. Four droppers are ordered, and the nurse is directed to put on one bottle a red or some colored string, with a corresponding color on the dropper used in that medicine, so the droppers and medicine cannot become mixed. Acid boric gr. xv, vaseline ʒ i, is ordered to be used on the lids to prevent glueing and to protect the skin during the frequent bathing. The bottles are numbered 1, 2, 3, 4 and 5. No. 1 is the boric acid, No. 2 tannic acid, No. 3 atropia, No. 4 argent. nitrate, No. 5 salt water. The following directions are given,

the numbers on the bottles only used : Bathe eyes well with No. 1 (boric acid solution) every hour ; four times a day, after No. 1 has been used, drop into each eye three or four drops of No. 2 (glyceride of tannin) ; this cleanses the *cul de sacs* well ; the lids should be manipulated thoroughly, and the secretions will come out in coagulated threads ; the eyes are to be washed out with No. 1 (boric acid solution again); night and morning No. 3 (atropia solution) is to be dropped in ; I do not wait for involvement of cornea and iris. Four times a day No. 4 (argent. nitrate solution) is used after No. 2 (glyceride of tannin) is used, and the lids manipulated well, so as to reach the *cul de sacs ;* immediately afterwards, the eyes are flushed well with sodium chloride ʒ i, aqua Oi. Then the lids are well covered with the ointment.

The glyceride of tannin serves a double purpose; by coagulating the secretion it acts as a cleanser, and then its action on the inflamed mucous membrane is favorable. Hydrogen dioxide is sometimes used for the same purpose; I think its use dangerous, as it seems to have an unfavorable action upon the corneal epithelium, softening it and producing abrasions, which are followed by sloughs, loss of vision, etc.

I direct that nothing be used about the eye for cleansing, such as sponges, but instead old linen and clean surgical cotton, or such material as can be burned. When there is much edema of the lids, hot or cold applications are of much service. Recently I have had most excellent results from the use of Formol 1 to 4,000 or 1 to 5,000 sol. In ulceration of the cornea, Formol gives most wonderful results.

When these directions are followed from the first day of the disease, I believe no eyes will be lost.

Sacral Tumors in the Fetus.—Gustav Anderssen (*Norsk Magazin for Læger, St. Louis M. & S. J., 1896, lxx, 100*) reports a case of labor at term in which the fetus could not be extracted, although the lower extremities were delivered. Upon examination it was found that a tumor was attached to the sacral region by a pedicle as thick as the wrist. The tumor was hard and lumpy, but with some soft parts. It was opened, and about a pint of greenish fluid evacuated. Delivery was then readily accomplished. The tumor weighed three pounds after the fluid contents had been evacuated, and was about the size of the trunk of the fetus. It contained a number of cavities filled with colloid substances, and also some cartilage.

ON CHILDREN'S SPINES—HEALTHY, UNHEALTHY, AND OTHERWISE.*

By Edmund Owen, F.R.C.S.,

Surgeon to St. Mary's Hospital, and Senior Surgeon to the Hospital for Sick Children, Great Ormond Street, London.

(*Continued from page 204.*)

Treatment.—On the matter of the treatment of vertebral ostitis I need not occupy much time. It is all included in the one word, *rest*. And inasmuch as the weight of the head, and perhaps, also, if the upper part of the body and of the arms has to be transmitted through the inflamed vertebræ when the child is erect on his feet, or sitting up, there is no alternative to keeping him in the horizontal position.

If he is secured in a spinal box, or if—the disease not being in the cervical region—he is fixed in a double Thomas' hip-splint, or in some other safe apparatus, I do not mind his being carried about a little, or raised obliquely, so that he can see what is going on around him. Until the disease is not only quiescent, but, so far as one can tell, until the carious region is actually undergoing consolidation, I would decline to discuss the question of applying a splint and letting the boy get about.

When in due course—after many months, it may be—this happy consummation has been reached, a rigid splint shall be applied. If the caries be in the cervical region, the splint shall extend from the front and back of the chest and from the shoulders, and it shall shore up and fix the occiput and the chin. For this, some would use poroplastic felt, which answers well; but, in my opinion, there is "nothing like leather." For disease in the cervico-dorsal region, the same methods serve.

In the case of cervical or of high dorsal caries, considerable help may be obtained by fixing a band around the child's head and attaching a cord to it which runs over a pulley at the bed-head and hanging a weight of a few pounds at the free end of the cord. Probably this method of extension acts rather by insuring more thorough rest than in any other way.

It is not to be for a moment suggested that the application of a few pounds' weight at the end of the cord can effect a separation of one inflamed vertebra from another; the intevertebral and the common ligaments of the spine would absolutely prevent such separation.

For the dorsal and lumbar regions nothing answers better than

* A Paper read at the Harveian Society of London, 9th January, 1896.

the poroplastic felt, which takes it bearings from the pelvic bones, reaching almost to the trochanters, and extending up into the armpits, and worn permanently. In my opinion, the most unsatisfactory of all forms of spinal supports are those made of steel.

I read in certain articles published in America that, in the treatment of spinal caries by "back-braces" (as our trans-Atlantic confrères call the steel apparatus), one of the objects in view is to "throw the superincumbent weight upon the transverse processes." I am quite at a loss to understand how such an unanatomical theory could have found currency.

Possibly there may be some surgeons present who, years ago, heard me speaking up for plaster of Paris jackets. If so, he may infer from my omission of all mention of them to-night that I have discarded them as useless. Nothing could be further from fact. So long as I was seeing out-patients I continued to use them. I do not say it boastfully, but few surgeons applied more plaster jackets than I did when I was seeing out-patients ; I have often applied ten, twelve or fifteen in an afternoon. I say this merely to show that I have had a full personal experience in this treatment of carious spines, and if I were doomed to another spell of work in the out-patient department of a children's hospital, I should most certainly start again with the plaster jackets. For the economical and convenient treatment of caries in the lumbar and in the lower two-thirds of the dorsal region there is nothing to beat them. But for the treatment of caries in the regions of the spinal column above this I have found them quite unsatisfactory. Sayre's jury-mast I tested fully and fairly, and I ultimately discarded it. The movement which it was designed to permit is just what one ought most carefully to guard against, and the theory that a child with cervical caries should be up and about is, in my opinion, quite wrong.

Although dealing with the subject of disease of the spine only in a general way, I must say a few words about two of the most serious complications of the caries: The first is abscess, the second is paralysis.

It is a great characteristic of tuberculous abscesses—and all spinal abscesses are tuberculous—that they come up quietly, and too often without observation. Therefore the medical man who has charge of a child with spinal disease should constantly be on the look-out for suppuration. It is somewhat humiliating when the mother, the nurse, or even the child itself says, "Oh, perhaps you ought to see this lump, though there is no pain in it." Sometimes it happens that the abscess has wandered very far from the stiff region

of the spine before it begins to approach the surface, so that even when the disease is in the dorsal or the high lumbar region the abdomen, the buttock and the groin should be overhauled every now and then, as well as the back and the front and sides of the chest.

In the last twenty years or so the treatment of spinal abscess has undergone a marvelous improvement. It was at first thought that the aspirator was going to work wonders in this direction, but the practical surgeon had to discard it as disappointing, if not useless.

The way in which one now deals with a spinal abscess is by laying it open, clearing away its lining of tuberculous granulation tissue, washing the cavity clean with a hot germicidal lotion, drying it, sewing up the incision, and applying pressure by means of bulky pads. Many of the abscesses thus dealt with are straightway cured, but some are found to need supplemental treatment, which may consist in packing the cavity with yards of gauze or leaving in a drainage tube. But the less that one has to do with the drainage tube in these cases the better.

In the treatment of spinal abscesses the truth of the saying is well exemplified, that nothing succeeds like success. And the most successful treatment is that by which the tuberculous focus is cleared away and the cavity is shut in from all risk of septic infection. In those cases in which, after all, a drainage tube has to be inserted, it should be taken out at the earliest possible moment, even if it is found necessary, later on, to re-insert it. Its presence in the wound is an invitation for the entrance of septic-micro-organisms, and, moreover, it keeps up a certain amount of irritation in the cavity. The paralysis which complicates a small proportion of the cases of spinal caries may be due to compression of the cord by granulation tissue, by pus, or by bone. And inasmuch as the disease is situated in the front of the vertebral canal the pressure is usually confined to that part of the cord in which the motor strands are descending. They are unsatisfactory cases in this, that we have not yet quite settled what to do with them. I used to know how to deal with them. I I kept them in absolute rest, and many of them got quite well. I think that I may say that most of them got well. The compressing granulation tissue, I suppose, underwent absorption, and the indefatigable leucocytes, like busy ants, carried away the offending bone grain by grain.

Then we began to think that operative measures might prove—ought to prove—advantageous in the treatment of the motor paralysis. So the spinal canal was opened from behind and all offend

ing material was removed from against the cord. Some of those cases turned out extremely well. One cannot say that equally favorable result would not have been obtained without the operation, but one may be pretty sure that in a considerable proportion the cases were regarded as actual "cures by operation," and were reported as such. Unfortunately one could not tell which are the cases which would give this good result. Of course those which were not of too long duration, and were not too miserable and exhausted, would be likely to give a better result than would those for whom the operation was undertaken as a very last resource. But those are just the cases which are most likely to get well without operation.

I must frankly admit that I have no good opinion of this operation of laminectomy, as it is called. When I have a case in hand that might probably be considered a suitable one for it I watch and I wait. I get some of my surgical and medical colleagues kindly to see it with me ; we talk it over, backwards and forwards and over again ; and I end by doing no operation.

The ancient Romans gave to their commander Fabius the nickname of Cunctator because they deemed his conduct in the field slow, and sadly lacking in enterprise ; yet, after all, his method was found to be not without merit. But in the surgery of to-day the method of Fabius is rather apt to be thought unworthy of adoption. So that whenever I am discussing with younger and more active surgeons than myself—men for whose ability and judgment I have the greatest regard—I feel sometimes compelled to take almost an apologetic attitude. To me, hesitating, they would be inclined to use the words which Macbeth's enterprising wife hurled at him when she found him hardly up to date—"Infirm of purpose, give *me* the daggers!"

Let me briefly report two of the cases in which I have recently declined to give officious operative aid :

A young fellow, but not a child, I grant, was under my care in St. Mary's Hospital with cervico-dorsal caries. He had almost complete loss of power in his upper extremities, absolute paralysis of intercostal and abdominal muscles, and entire loss of motion and sensation in his lower extremities. Cerebral control of his lower parts was so completely cut off by pressure on the cord at the carious angle that he had sometimes priapism when his water was drawn off, and he had spastic contraction of his limbs. For nearly nine months he was under my care. No operation was done. A few weeks ago he wrote to Dr. Mitchell Bird, the Medical Superintendent of the

Hospital. Here is his interesting and instructive report, word for word, as he wrote it :

Oct. 30th, 1895.

Sir—"I entered St. Mary's Hospital Sept. 12th, 1892, "was discharged incurable May 8th, 1893. Nov., 1894, I be- "gan to get better, how I knew was because my legs left off "jerking or shooting up when they were touched and they did "not press so hard one against the other, and also I could just "move my toes a little, also I could retain the water when I had "an injection in the bowel, before that the injection had to be "used three and four times before anything would pass. About "February I could move my legs about the bed and began to "get a little sencaision in my legs and could raise up on one "elbow and my bowels were improved more.

"In April I could move my legs about the bed better and "had got more strength and sencaision in them and could turn "over and sleep on my side at night and my left hand had got "stronger so I could grasp anything with it.

"In May I got up and set in a chair for the first time and "had got more sencaision in my legs.

"June 2th. I was wheeled out in a bath chair and set out "in the air every day afterwards when the weather permitted "and gained strength much faster than when indoors. Three "weeks after my bowels worked without the injection and "haven't used it since and had much mor sencasion, about the "later end of June I could bear my waite on my legs but not "walk.

"August 19th. I walked with crutches and was much "stronger and had got much more sencasion and my bowels "had improved and now (Octb. 30th) I still walk with crutches "outside, but I can walk indoor without them by just holding "on the things with one hand. I am pretty strong on my feet. "My bowels have improved still more and also the sencasion "but I haven't got my right feeling same as I had before I was "ill, and when my left had got cold I don't seem to have got "hardly any strength in it."

What a triumphant result this would have been regarded if only a laminectomy had been performed! How well and how convincing it would have appeared in a report of cases following on the operation. But as it is, it—with many other similar cases—is merely a tribute to the efficiency of the working of that able and paternal

practitioner who is popularly understood to carry about an hour-glass instead of a thermometer and a scythe instead of a scalpel.

On another occasion I once quoted an Italian proverb which seems specially applicable to the treatment of these paralytic cases. It goes to the effect that with straw and with patience one can ripen that very unpromising-looking fruit, the medlar.

By reference to note-books I might be able to give the clinical records of many a case of paraplegia which has completely recovered under the treatment by masterly inactivity. But, in my experience of medical societies, I have long since learnt that there are few things more wearying than the recitation of dry records of even the most successful cases. The monotony of triumphs palls, and the hearers have to sigh in vain for notes, however brief, of a belated autopsy. But Tommy Nugent's case, a boy of six years, is fresh in our memory at the Children's Hospital, Great Ormond street, where he was admitted as an in-patient last April. For two and a half years he had been treated at one place and another for caries in the upper dorsal region. For six weeks he had been unable to walk. There was total paralysis of the lower extremities, together with spastic contractions and with anesthesia of the lower part of the abdomen.

To make a long story short, we kept him absolutely at rest in bed, making interesting experiments as regards his un-inhibited reflexes, and refraining—without the exercise of any self-denial on my part—from offering any operative interference with his spinal projection. In due course everything came right, and when I examined him at the end of December, I found him able to walk with only a little need of help.

There is, of course, nothing extraordinary in these two reports of recovery of the power of locomotion after spinal pressure from Pott's disease, without operation having been done. But a few years ago so much dust was thrown into our eyes in connection with accounts of recovery after laminectomy, that people began to think that, if the operation was not to work wonders, at least it had come to stay. But, like a heroine in one of those wretched modern society dramas, it has been found to have a discredited past and a hopeless future. Personally I believe that I have quite done with it.

Something must be said, of course, as to the treatment of the feeble spine of the rickety child. The child has probably a big head and flabby muscles as well as a flaccid spine. He must evidently be prevented from sitting and standing; he must be kept lying down the chief part of the time; but, if he can, he may run about a little,

though if he is allowed to be upon his legs too much the ligaments of his feet and of his knees will be giving way. Fresh air, wholesome food, and massage will do the child good, and as he continues to improve the spine will improve too. That is certain. But I have often seen these unfortunate children fixed up in steel supports with straps and pads. Could anything be more unsurgical? And the error in treatment has sprung from people considering that a child's spine is not a portion of his own body, but is a thing apart and needing peculiar treatment. Paraphrasing an old saw we may surely say, "Take care of the child and the spine will take care of itself."

I think that the educational pressure which has extended even to very little boys and girls has not done them much physical harm, because children have been taught to play and to exercise their muscles as well as their brains. But every now and then we come across a little child who, so far as one can tell, has been prejudicially affected by too much sitting and standing in school, and in some instances by sitting over evening preparation as well. But I am glad to say that my experience is that schoolmasters and mistresses are always willing to listen to the suggestions of the medical man in respect to these children and often to give material help in their treatment. Personally I would prefer being a healthy plowman to a sickly philosopher, but I can quite sympathize with the teacher who tries to prevent a pupil being removed even temporarily from his intellectual forcing house. Nevertheless, in a certain few instances I have thought it right to have weedy girls with what some would call "unhealthy" spines taken absolutely from work for a while and allowed to run wild in the country.

Then, at last, we arrive at that part of my Paper in which I set myself the task of speaking of children's spines which are otherwise than healthy or unhealthy. And I confess that I approach it with a certain amount of diffidence. When I handed in the title of this Essay to the Surgical Secretary of our Society I felt very strongly upon the subject—and so I do now. But when I began to place my thoughts upon paper I felt something like Mr. Acres when, with pen and ink, he calmly set himself down to indite certain contentious phrases. There is a pretty little play by Alfred de Musset, which is written on the proverb, "*Il faut qu'une porte soit ouverte ou fermée*," and the statement of fact contained in the title could hardly be disputed, I should think, even by a lawyer. Possibly any one casually reading the title of my Essay might say, likewise, that a child's spine must be either healthy or unhealthy. ("This was some-

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time a paradox, but now the time gives it proof.") I have, as I have already remarked, a feeling of diffidence in approaching this class of "otherwise" spines. But I am sure of its existence, and it seems to me to be increasing in size. It is composed of children whose spines are, in my opinion, healthy, but in the opinion of others, whose honesty of intention and judgment I do not for a moment question, unhealthy.

Here is a specimen of the spine of which I wish to speak. The child is thin and poor in appearance, and its back bone, like the rest of the child, is a little feeble. Are you going to call this a case of "affection of the spine," and, therefore, needing special spinal treatment? I say, "certainly not." Others are apparently disinclined to agree with me. So to avoid disputing I place the case under the heading of "otherwise." And, having done so, I intend availing myself of this opportunity for saying that in my opinion it is a dangerous habit to take too special, too narrow a view of the defects and deflections of a child's back bone. The child's spine is far too often looked at, written about, spoken of, and dealt with as if it were something apart from his general being and stood in need of peculiar supervision and custody. How it is that such a misapprehension has come about I cannot attempt to explain. All that I know is that it exists in a very considerable degree, and, for every reason, it is to be regretted.

Here is another child, of four years, whose mother had unhappily discovered, when it was a tender infant, that the social demands upon her time and energy prevented her nursing or even looking after it. So the child was left to be brought up on one or all of the artificial foods which are advertised upon omnibus or boarding. But at last the hysterical remnant of maternal instinct was aroused, and the lady discovered by chance that her child did not sit up straight, and that its back was weak and bent. Her alarm is great, and, acting on the impulse of the moment, she takes her pen and sits down quickly and writes to some professional friend in town, "Who is the best man for spines?"

To which of my surgical confrères have such inquiries not been addressed? Personally I find the question a somewhat delicate and difficult one to answer, for this question is sometimes put to me amongst the rest. I will have you mark that the mother does not usually ask her country doctor the question. She is, in this crisis, apt to regard him as a man of ordinary common sense and she fears lest perchance he might offer to treat the child. In her dire distress she had rather not place her under the care of a gentleman of or-

dinary professional skill; she desires to secure the advice and services of some one with peculiar knowledge. She cannot think that the general practitioner who has stood her friend in many a serious illness can understand the treatment of a "diseased" spine. She has always heard that diseases of the spine need very special knowledge and treatment. So off she goes, and the practitioner may or may not hear of the case again. But I think that, as a rule, he does.

From what I see of contemporary practice, I feel compelled to say that I think far too much fuss is being made about a little lateral deviation in a child's spine. I am not referring, of course, to that lateral deformity which is on rare occasions found as an early associate of the stiffened back of tuberculous ostitis, but I am speaking of the slight lateral bending which is so often met with in the back of a growing girl or boy, the spine being as flexible in every direction as a healthy child's spine should be. The family doctor is asked to examine a spine which by chance a governess or a nurse has found to be "growing out," or a little different from the backs of other children. The doctor looks, as he ought to do, at the child itself first, and sees that it is well, happy and contented. So he feels pretty sure that there is nothing very serious the matter before he directs his attention to the spine. He assures himself that the movements of the back are free, he disregards the trifling deviation, and he cheerily says that the back is all right.

The situation reminds me of the "Closet Scene" in *Hamlet*, with the anxious mother, the man, and the apparition. But the resemblance soon breaks down, for in the drama the man could see the apparition and the woman could not. In our case it is the gentleman who cannot see it. The apparition, be it understood, is, in our case, the slight deflection of the child's spine. If you will allow me just for a moment to interchange the speakers, the scene will go perfectly well. The anxious mother, seated at the table, looks the man intently in the face and, pointing to the apparition, says: "Do you see nothing there?" To which the doctor replies, and, most unfortunately, with a slight smile, "Nothing at all; yet all that is I see."

I am sure that I shall be adjudged to have left the field of romance and to have returned again into the daily life of professional reality when I say that the anxious lady is by no means satisfied with her friend's action and advice. Indeed, she has already made up her mind to seek and secure for the child what she is pleased to call 'better advice."

A little while ago a lady came into my consulting room with two children, asking me to examine the back of the elder of them. It was rather a weedy child with a slight lateral curvature, the result of general feebleness and of faulty attitudes. I told the mother that it was a simple matter, and that it would all come right with care and ordinary attention. This assurance evidently relieved her mind, and she then told me that she had already seen a surgeon who had taken a much more serious view of the case than I apparently had done. That he had told her that the child must at once come under his close supervision for some months and be drilled and exercised. I replied that I understood the gentleman to be very attentive and skillful, and that she would do well in placing the child entirely in his hands if she thought fit. She then asked me if I would mind looking at the younger child's spine. A glance at the naked back showed at once that there was nothing whatever the matter with it. And so I told her. She then said that the other surgeon had also examined this second back and had advised that the child should undergo a similar course of drillings and exercises. The lady then asked him in considerable anxiety—so she told me, at least—if he found any disease in, or anything wrong with, this back. He said, "No; but seeing that his elder brother's back is wrong he also may get it; but if I take him in hand he will not." I could not restrain a laugh. For the thought flashed through my mind such prophylactic treatment of healthy spines must open up a vast and profitable field for surgical enterprise. But then I thought that such occupation was scarcely a worthy one for a surgeon to seek. And I am certain that in this the general opinion of the profession would agree.

Here is another case in point. It is that of a schoolgirl of fourteen years. She complains that her back "aches," and she has got into the habit of sitting awkwardly. Her spine moves freely and painlessly in every direction, but still she complains and lolls. Shall that spine be called healthy or unhealthy? There is nothing wrong with it. It is the owner of the spine which is out of health. The worst thing possible for the girl, and for her mother, is to regard this as a case of spinal disease, or, to put it more delicately, of spinal affection. The word "affection," apparently, here comes in usefully—it means nothing or a great deal. Some mothers would not greatly mind their daughter having a little "affection" of the spine, if it entailed her bringing up the child for treatment in London during the months of May, June and July.

What is needed is to see that the girl does not sit or stand too

much, and that she does not give herself too much to study. I would be for keeping her, as far as possible, in the open air and in the country. I would certainly get her away from town with its theaters, its hot and stuffy rooms, and from its crowded social entertainments—so called. I would encourage her to play tennis and golf, to ride a pony, or even a bicycle, provided she did not fatigue herself, or put on "rational costume."

I have seen plenty of growing girls with these "otherwise" spines, who have actually and positively "grown out" of their temporary weakness, and that without having the chance of enjoying the advantages to their general health which would have been afforded by the measures just sketched out.

It is only in comparatively recent years that we have had such sad pictures painted for us of weak spines which have not received the most modern methods of treatment. What, then, has become of those girls who, a generation or so ago, had weakish spines? Where are they? They cannot all have perished. My own opinion is that many of them are healthy mothers of families, and that others are leading in one sphere or another useful or even ornamental lives. At any rate, I very rarely see either in professional work or in society any approach to the crumpled spine which henceforth is apparently to be the lot of those whose parents omit to seek the special and persistent treatment.

Let me briefly record another case of collateral interest which I saw at the beginning of last November: A child of five years had a congenital displacement of the head of one femur, for which he was very properly wearing a boot with a thick sole and heel. In his back there was a slight, a very slight, compensatory curve, which had, no doubt, been started before the defect of the hip joint had been found out and the boot thickened. The spine was as flexible as india-rubber and the lateral deviation could be effaced with the greatest ease. I expressed the opinion that his spine was healthy, and with this expression most surgeons, I am sure, would agree. But, unfortunately, somebody else had said otherwise. The mother pressed me upon the subject; still, I nothing saw; yet all there was I saw. She then told me that she had been for what she thought should be "the best advice," and that the gentleman in giving it had greatly alarmed her. He had found serious fault with the child's back and had told her that he must at once have the child sent into lodgings near him so that he might duly exercise and train the muscles. The lady said that she could not well arrange for this until after the Christmas holidays, to which the gentleman rejoined that

unless the child were *immediately* placed under his care he would not be answerable for the consequences. She had been made to think that the outlook in this contingency was black as night itself. In her anxiety it is quite possible that she had placed too serious a meaning on what the gentleman had said, or it may be that she did not report her interview correctly—we all know how unfairly, dishonestly, even, the remarks made to, or the account of the treatment adopted in connection with, a patient are carried about. It is a good plan, indeed, to disregard what a patient says concerning his previous treatment whenever the remarks reflect unfavorably upon the medical attendant, unless there is some obvious and unmistakable evidence of confirmation, and even then to exercise judicious skepticism. I will content myself, therefore, with saying in connection with this case that, in his second Epistle to Timothy, St. Paul gave a special caution regarding those who "lead captive silly women.' At the present day, more even than in St. Paul's time, silly women, of both sexes, love to be led captive. The therapeutic dip in the common Jordan of general practice offers them no attraction. They desire to do some greater thing. But I strongly hold that it is our duty as medical men to exert our influence against parents and patients entering such mean captivity. It was George Eliot, I think, who said that medicine was to be honored as a profession but despised as a trade. It would be, I am sure, a very easy business to induce many a mother to sacrifice her time or means over real or imaginary contingent advantages for her child. It is dealing unfairly with our profession, as well as with our patients, if we do not loyally set ourselves against everything which in the least degree even approaches that which might appear to be the opposite to square conduct and upright intentions.

I do not for a moment suggest, nor do I think, that my professional brother was dishonest in the matter, for dishonesty implies gross moral obliquity. I am quite satisfied that he fully believed in the urgency of the need for his treatment in order to effect the child's physical salvation. I should say that he was well-meaning in every sense of the word, but that he lacked professional judgment, and that he had lost all sense of proportion and perspective in a pathological and therapeutic sense.

Not only had he ignorance of that bit of worldly wisdom which was enjoined by the philosopher, *Surtout point de zêle*, but he had actually been *over-zealous* in the prosecution of his work. He had brought himself to think and even to foreshadow to parents that

unless the weak-backed girl were put under his treatment she must grow into "Sic a wife as Willie had":

"She's twisted right, she's twisted left,
"To balance fair in ilka quarter;
"She has a hump upon her breast,
"The twin of that upon her shouther—
"Sic a wife as Willie had,
"I wadna gie a button for her."

A Sign of Death by Exhaustion from Insufficient Nourishment in Young Children.—Dr. SEYDEL (*St. Louis M. & S. J., 1896, lxx, 101*) says that, in all cases in which death is brought about in young children by insufficient nourishment, total disappearance of the thymus gland is an invariable phenomenon. Whether this disappearance may not also be brought about by exhausting diseases, such as fevers, requires further observation. It is to be accepted as probable, as the thymus gland must be looked on as, to a certain extent, a reserve material; and it is highly probable that it is drawn upon to supply nutrient material that may be wanting. Where organic changes are absent, and where on section of emaciated children there is absence of the thoracic glands, it may, according to the author's observations, be taken as a more certain sign of exhaustion by deficient and unsuitable nourishment than narrowing of the lumen of the intestine, which, in point of fact, is as a rule not present.

Disinfection of the Mouth in Scarlatina.—At the Société des Hôpitaux, in Paris, M. LEMOINE recently advanced the theory that the period of contagion in scarlatina is at the beginning rather than at the close of the disease.

He regards the secretions of the mouth and pharynx as the dangerous elements rather than the desquamating epithelium, and considers that the disinfection of these cavities should take first rank among prophylactic measures, and that the period of isolation to which cases of scarlatina are at present subjected should be considerably shortened.

This view is important, in that other eruptive diseases, as measles and smallpox, may perhaps be transmitted by the same means.

Until the pathology of these diseases is better known, it seems rational treatment to disinfect the mouth and pharynx, thus possibly rendering a service both to the patient and to the attendants.—*Am. M.-S. Bull., 1896, ix, 150.*

Practical Notes.

Palatable Castor Oil.—By dissolving pure saccharine in a small amount of hot alcohol, then adding to castor oil and mixing thoroughly, then adding oil peppermint to flavor, a palatable castor oil is obtained. While hardly the equal of honey in palatability, it is more pleasant tasting than any other combination of castor oil the writer has ever seen. The following formula is the one used by the writer :

℞ Pure Saccharine. ʒ ss
Alcohol. ½ oz.
Castor Oil. qs. ad 1 pt.
Oil Peppermint 5 or 6 gtts. to flavor.

Mix alcohol and saccharine and heat till the saccharine is dissolved ; then add to oil and shake well ; then add oil peppermint.

Ordinary saccharine is generally impure. It may be readily tested, however, by treating with ether, which dissolves out the benzoic sulphionide, leaving the impurities undissolved.—*Edel, Spatula, 1896, ii, 132.*

Perchloride of Mercury in Whooping Cough.—The *Giornale Medico del Esercito* advises painting the throat of children affected with whooping cough with a 1 per 1,000 solution of perchloride of mercury, going well to the back of the tongue and over the uvula and tonsils every morning. No toxic effect has been observed, and most cases can be cured in from 8 to 14 days.—*Am. Druggist, 1896, xxviii, 45.*

A Remedy for the Incessant Cough of Measles.—The *Gazette hebdomadaire de médecine et de chirurgie* for January 2d contains the following formula, which is attributed to Widerhofer :

Extract of hyoscyamus.....2·25 grains
Distilled water.....2·2 ounces
Syrup.....150 grains

A teaspoonful of this mixture is to be taken every two hours.—*Med. Journ., 1896, lxiii, 131.*

Arsenic in Anemia.—Some of the worst forms of anemia are greatly benefited by arsenic. They are those which result from long-continued inanition and slow convalescence, in which the stomach does not suffer; from primary catarrh; from chronic ma-

laria; from chronic tuberculosis of the lungs; from chronic glandular swellings of a malignant type, either lymphoma or sarcoma. In all of these forms it is highly useful. The dose need not be large, but may be increased slowly. One-hundredth of a grain of arsenious acid, or one drop, or one and a half of Fowler's Solution, amply diluted, three times a day, after meals, are well borne for weeks, even months, without interruption, by a child of four or five years. In malaria, the remedy may be given with quinine (and iron), in other forms with strychnia (and iron); in phthisis, with digitalis.—*Jacobi, Therapeutics of Infancy and Childhood, p. 97.*

Anthelmintic Powder for Children.—Dr. Jose E. Ferran, in the *Medical Week*, November, 1895, recommends the following formula :

℞ Benzonaphthol. 2 Gm.
Santonica. 1 Gm.
Sugar. 5 Gm.
Mix, and divide into twenty powders—From two to five powders daily.

After expulsion of the parasites, Dr. Ferran administers benzonaphthol with or without magnesia during from two to four weeks, in order to prevent reproduction of the intestinal worms.—*Medicine, 1896, ii, 149.*

For Tape Worm.—A strong decoction of the common pumpkin seeds will usually expel the pests. This decoction should be taken fasting and followed in twelve hours by a brisk cathartic.

℞ Pumpkin seeds, ℥ vi
Water, qt. ii
Mix and boil down to one quart.

Sig.—Dose for an adult, one wineglassful every half hour until all is taken.—Cyrus S. Reeves, M. D., Lone Grove, Texas.

A Deodorant of Iodoform.—According to the *Journal de Médecine*, spirit of turpentine will at once remove the objectionable odor from the hands after using iodoform, as well as from spatulas and vessels that have been in contact with the drug. A little turpentine should be added to water, and the articles it is desired to deodorize placed therein, being subsequently washed with soap and water.—*Bull. Pharm., 1896, x, 83.*

The Best Method of Sterilizing Hard and Soft Rubber Instruments.—Lannelongue recommends for the sterilizing of hard and soft rubber instruments, subjecting them to the fumes of

quicksilver. The instruments are rolled in flannel impregnated with mercury and placed in closed vessels. By a simple test you can demonstrate that the space becomes filled with fumes of quicksilver. The bacteriological examinations show that after a very short time the instruments are thoroughly aseptic. As a lubricant, the author is in the habit of using olive oil ; a few globules of the quicksilver are kept on the bottom to keep the oil sterile. Since these measures have been adopted the author has had the best results.—*Meyers Bros. Drug., 1896, xvii, 63.*

Chapped Hands and Face.

Compound tincture benzoin,	10 min.
Alcohol,	2 fl. dr.
Rose water,	30 min.
Glycerin,	1 fld. dr.

Mix.

Apply to chapped surfaces at night, after they have been washed with soap and warm water and thoroughly dried.

A second application is rarely required. This remedy is equally efficacious to the treatment of fissured, bleeding and sore lips.—*Meyers Bros. Drug., 1896, xvii, 85.*

Serum Injections in Meningitis.—In the case of a seven-year-old boy in whom meningitis had been induced by an infection of pneumococci, Righi (*Gazz. degli Osped., October 24, 1895*) injected blood serum obtained from the patient's sister, who was convalescing from meningitis. After the injection of five cubic centigrams the symptoms of danger disappeared, the fever was reduced, and the patient rapidly recovered health.—*Med. Rec., 1896, xlix, 241.*

Schools and Exercise.—We have laws to prevent children from being sent to work in factories, or to be employed upon the stage, but none to protect them from the equally destructive, incessant schooling in close rooms, without air or exercise. There are too many books bought for Christmas, and too few skates.—*Jacobi, Therapeutics of Infancy and Childhood, p. 94.*

Resorcin in Infantile Diarrhea.—Fenwick (*Brit. Med. Jour.*, Dec. 21, 1895) considers resorcin the most efficient antiseptic in infantile diarrhea. He is accustomed to giving three-grain doses every four hours to infants only a few weeks old without the least toxic effect, claiming to get very decided and beneficial results after the fourth dose.

Editorials.

THE ROENTGEN RAYS.

A FEW weeks ago the Atlantic cables heralded a new discovery by Professor Roentgen, of Wurtzburg. He had succeeded in developing rays of light that would penetrate innumerable substances hitherto considered opaque. At first the reported discovery was looked upon askance by the members of the medical profession, if we may judge from a published authoritative interview with several of the foremost members of the profession, concerning the probable utility of the light for the advancement of the science of medicine, which was published by a leading daily paper. To-day if we could turn the wonderful X rays on the walls of the physical laboratories of this and every other civilized country we would be treated to the surprising spectacle of seeing every physicist and amateur leave work which had before monopolized his interest that he might devote himself to the utilization, adaptation and improvement of Roentgen's discovery.

From reading the accounts in the public press one would gain the impression that there are those, and among them men who have already made their names widely known in the scientific world, who have scarcely allowed sleep to settle over their consciousness since the time when the discovery was first announced, so insatiable is their desire to develop its utility. Already patients with obscure diseases are beginning to ask their medical advisers if the cathode rays cannot let some light in on the nature of their troubles, and, worse than all, the blatant claims of the worst of all quacks, the quack in the profession, are beginning to be doled out to the public through the medium of the press. Enthusiasm over a purely scientific subject rarely reaches such a stage as it has in the instance under discussion, and when it has, or gone further, it presages a bad prognosis. Scientific discoveries are generally hampered, not ad-

vanced, by enthusiasm, either in the shape of reception or attempted utilization.

The possibilities of Prof. Roentgen's discovery to advance diagnostic perspicuousness and increase therapeutic resources are certainly great, but these possibilities can only be realized after very essential modification of the cathode rays which are to-day permeative of every structure in the human body, except bone. To obtain a photograph of the bony framework of a living individual may be in some rare instances desirable, more so in the adult, in whom the bones are more liable to disease, than in children. But it is not in this direction that we crave diagnostic light, but rather in obscure visceral and intra-cranial diseases. Already, it is said, the cathode rays have facilitated the discovery of leaden bullets imbedded in human tissues, and it may be that such substances as calculi may sufficiently hinder the rays to be silhouetted. Indeed, we are informed that already Neisser of Vienna has succeeded in obtaining a photograph of renal calculi; and more astounding still, that he has been able to distinguish a phosphatic from a uric acid calculus!

On the eve of what promises to be an epoch-making discovery, particularly to our profession, we await impatiently, yet confidently, for the results of the physicists' ingenuity.

Public Libraries and the Dissemination of Disease.—Libraries have repeatedly been accused of spreading disease. A recent communication from a London librarian to the Westminster *Gazette* shows that precautions are adopted in the public libraries both by London and the provinces. The library receives each day a list of the houses in the parish where infectious disease exists. No books, under any circumstances, are issued to readers in the infected houses.

If books have been loaned to dwellers in one of these houses previous to the outbreak of the disease, notice is immediately sent that the books are not to be returned to the library, but retained and delivered to the sanitary authorities, who undertake to collect the volumes without delay and thoroughly disinfect them.

A fine not exceeding £5 is imposed upon borrowers who return to the library books that have been exposed to infection.—*Am. M.-S. Bull., 1896, ix, 139.*

Society Report.

NINETIETH ANNUAL MEETING OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Held at Albany, January 28, 29 and 30, 1896.

SEPSIS OF THE NEW BORN.

Dr. M. A. Crockett, of Buffalo, in a paper on this subject, said that a physician of Buda Pesth had carefully observed over a thousand new-born infants, and had come to the conclusion that in most infants a rise of temperature was the first sign of disturbance, and that this would have probably been overlooked, for a time at least, if the clinical thermometer had not been used. The clinical and anatomical signs of infection might be gastro-enteritis, lobular pneumonia, etc. The paths of infection were the navel wound, the food and inspiration. Acute dyspeptic diseases and general pneumonias were rare, and the prognosis was much more favorable than where gastro-intestinal disorder occurred in connection with septic infection. He then reported three cases of sepsis in the new-born, one in his own practice, and two from the practice of Dr. Snow. In his own case, following a normal labor, nothing abnormal was observed for the first six days. The cord had been dressed with borated cotton. On the seventh day the child became restless; a few hours later there was a severe eclamptic attack, with a temperature of 101°; and this was followed by repeated convulsions, and death in fourteen hours. No signs of inflammation were observed around the umbilicus. The convulsions began forty eight hours after the fall of the cord—the usual period of inoculation of the tetanus bacillus. The writer recommended that a sterile ligature be used for tying the umbilical cord, and that it should be applied close to the abdomen. An aseptic dressing should be applied for the first three days, and then this dressing should be changed on alternate days. To secure rapid mummification of the cord, the child should not be bathed until the cord had separated. Out of 230 children so treated, the observations already alluded to showed a diminution in the number of cases of infection from 23 to 3 per cent.

Dr. A. Jacobi, of New York, in discussing the paper said that the author was correct in all his statements. Access to the interior of the infant's body was possible by many channels—the navel, the

skin, the mouth and the anus. Aspiration of liquor amnii was not at all the innocent matter many supposed; it was a common cause of sepsis in the newly born. When the infant's skin is maltreated by scrubbing, by the use of bad soaps, by rupturing pemphigus vesicles, etc., it was easy for septic micro-organisms to gain entrance to the interior of the body. The infant swallows the bacterium coli; the inconsiderate washing of the mouth of the newly born caused superficial erosions of the delicate mucous membrane, and so favored the introduction of septic matter. It was known that the meconium is absolutely free from germs immediately after birth, but that it was not germ free after twenty-four hours; hence, either these germs are swallowed or they enter through the anus. The latter was a common occurrence; hence, enteritis of the newly born not infrequently began in the lower part of the large intestine. Septic matter was often introduced into the navel wound by cutting the umbilical cord with dirty scissors used about the patient's house.

Dr. Charles Jewett, of Brooklyn, said that undoubtedly septic infection might take place through other routes than the umbilicus, but he had never happened to meet with such a case. The writer had referred to an elevation of temperature as one of the early and reliable symptoms of disease in the newly born. To this he would reply that it was very common for the temperature to rise from one to three degrees in the first few days of life, and yet the most careful scrutiny failed to detect anything abnormal with the infant. This rise of temperature had been ascribed to the innutrition of this period. The umbilicus should, of course, be kept as aseptic as possible when healthy, but when it became septic, antiseptic dressings were called for.

DISCUSSION ON EARLY AND LATENT SYPHILIS IN INFANTS AND YOUNG CHILDREN.

Dr. George T. Elliott, of New York, opened the discussion with a paper on hereditary syphilis, its diagnosis and treatment. (See next issue of Pediatrics).

NERVOUS MANIFESTATIONS OF SYPHILIS.

Dr. B. Sachs of New York read a paper with this title. He said that syphilis of the nervous system was apt to be a cerebro-spinal affection, and might involve a small area of the brain or of the spinal cord. Cerebro-spinal syphilis was an extensive disease of slight intensity. A child with a mild form of palsy, with speech imperfectly developed or lost, and with symptoms of cortical irritation,

might be reasonably considered to have cerebro-spinal syphilis. Cases of idiocy due to syphilis occurred, but they were comparatively rare. A small proportion of infantile palsies only were due to cerebro-spinal syphilis. Out of more than 200 cases in which Dr. Peterson and he had carefully inquired into the etiology, only one was found to be due to syphilis. Ocular palsies occur occasionally in children, and are probably due to syphilis. They are commonly associated with hemiplegic or paraplegic disturbances. Among the spinal manifestations of hereditary syphilis is a spastic paraplegia coming on late in life, and often associated with palsies and complete immobility of the pupils. There is apt to be thickening of the pia with the formation of gummatous growths, and also endarteritis of the brain and spinal cord.

Dr. L. Duncan Bulkley, of New York, said that hereditary syphilis, like syphilis contracted by extra-genital means, was much less common now than formerly. Syphilitic infants were always dangerous to those around them, hence for the sake of both the child and its attendants it was important to recognize the disease and treat it as early as possible. He still felt that the best plan of treatment was by inunctions of half-strength mercurial ointment, applied under the infant's band, but this treatment to be thoroughly effective must be continued long after the disappearance of all symptoms of the disease. For the late manifestations, he favored "mixed treatment," giving the remedy in wine of iron. The syrup of the iodide of iron had proved in his hands an exceedingly valuable remedy in the treatment of infantile syphilis.

Dr. Edward D. Fisher, of New York, said that it was difficult to determine that a cerebral hemiplegia was due to hereditary syphilis; in the majority of cases it could be better explained by cerebral compression, or by menigeal or cerebral hemorrhage. There was a strong probability of hereditary syphilis where a child of ten or twelve years suddenly developed optic atrophy or deafness. The speaker said that he agreed with the last speaker regarding the treatment, except that he preferred in cases where mixed treatment was indicated to give the iron separate from the other remedy.

CONGENITAL DISLOCATION OF THE HIP, WITH EXHIBITION OF CASE SUCCESSFULLY TREATED.

Dr. Halsted Myers, of New York, read such a paper He said that the anatomy of the condition had become well known through the many recent operations. Some cases seemed to be due to traumatism without malformation, and others in which malformation appeared to be the prime cause. An early diagnosis greatly

improved the chances for cure. Before the changes secondary to walking occurred, a reduction was comparatively easy, and retention probable, since relaxation was most commonly found with anteversion and flexion of the neck of the femur, and these were secondary changes. In 302 cases of Hoffa's operation, or some of its modifications, the mortality was between three and four per cent. The latest reports were still better. There had been no death in the last 22 cases of Broca, or in the last 100 cases of Lorenz. The danger of the operation seemed to be almost entirely dependent on sepsis, therefore the utmost care in this respect was necessary. The manipulations of Paci should first be tried, viz.: forcible flexion, abduction, rotation outward and extension, as if to reduce a traumatic dislocation. The limb should be then fixed in an abducted position. After three or four months the patient might be allowed to walk with a protective splint. If this treatment failed after a fair trial, the operation of Lorenz was indicated. Over 80 per cent of his last 100 cases he considered successful, and in 11 out of the 13 reluxations the head of the femur passed upward under the anterior superior spine—the most favorable position, except in the acetabulum itself.

Dr. Myers then exhibited his successful case—a girl, three and a half years of age when first seen. At that time the shortening was 1½ inches, the telescoping and lordosis were marked, as was the limp. The dislocation was reduced by Paci's method, and the joint subjected to rather severe manipulations, with the hope of exciting adhesive inflammation. The limb was fixed in an abducted position, without extension, as he did not believe this was indicated if the muscular retraction had been fully corrected at the operation. The spica bandage had been removed about once a month, and the joint manipulated, and again fixed in an abducted position. Five months later a splint had been applied, which allowed motion at the hip, knee and ankle, but which kept the limb abducted, and exerted pressure against the trochanter. This had been worn night and day for seven months, and the child allowed to walk about freely, with a high shoe on the opposite foot. The shortening was now less than one-quarter of an inch, the joint was firm without telescoping, and motion was free in every direction. The child had walked for a week without any apparatus for a part of each day, and no change could be found in the joint. The splint would be left on most of the time for several months yet. In these cases, the speaker said, unless treated, the shortening, telescoping, lordosis and limp steadily became worse as the child grew, and many of these children suffered

pain. Many cases also of very marked deformity and disability were recorded; therefore the speaker urged the adoption of active treatment rather than the old let-alone method.

DISCUSSION ON THE PRESENT STATUS OF BRAIN SURGERY.

Dr. Edward D. Fisher said that experience had shown that the brain could be extensively manipulated, or even considerable portions removed, without great danger to life. Operations on the brain were more especially indicated in (1) cases of traumatism; (2) localized epilepsies; (3) cases of athetosis, whether associated with epilepsy or not; (4) tumors; (5) abscesses of the brain; (6) cases of cerebral hemorrhage; and (7) in cases of microcephalus. It was true that statistics showed that but a small proportion only of such cases were benefited by operation, but one successful case should have much greater weight in indorsing the operation than many failures, provided the operation rest upon a scientific basis. When the athetosis appeared to be due to cortical irritation, removal of the cortex was indicated. In operations for epilepsy, the speaker favored the bone-flap operation, as by this method a complete restoration of the skull was secured, thus removing the danger of subsequent injury. If the dura were thickened, it should be removed. Perfect union would take place even though the bone were stripped of periosteum. A careful observation of the pulse during operations in which the chisel had been used, had failed to convince him that the blows of the hammer produced great shock, as many surgeons claimed.

Dr. M. Allen Starr discussed cases of brain tumor. He said that recent experience seemed to show that only about seven per cent of such tumors were appropriate cases for operation. Their difficulty of access, and the uncertainty attending attempts at localizing brain tumors furnished the principal obstacles to progress in this field of surgery. Statistics showed that the prognosis was the best in sarcomata—even better than in cysts, for the latter exhibited a strong tendency to return. He preferred the flap-operation to the trephine.

Dr. Charles L. Dana took up the question of "The Value of Craniotomy for Imbecility and Idiocy" (see page 243 of Pediatrics). His own personal experience comprised fourteen cases, three of which had been improved, while eight remained unimproved and three died. These figures corresponded very closely with the statistics collected from various sources. The congenital idiot and the imbecile represented the two classes most likely to be benefited by the operation. The former class should

not be operated upon after the age of four years; the latter may be successfully treated by operation up to the age of puberty. Only in occasional instances had he seen any benefit from the operation; it never effected a cure, but sometimes produced a mental and physical improvement. He had always practiced linear craniotomy, using a wide groove and lateral branches. The results were sometimes not evident for several months. It had been supposed at first that the operation brought about improvement by giving more room for the growth of the brain. This view had been quite generally abandoned, and his own theory of the *modus operandi* of the operation was that it produced a profound disciplinary effect on the idiot.

Dr. James W. Putnam, of Buffalo, said that two cases operated upon by Dr. Roswell Park by craniectomy had exhibited a very great degree of improvement. The death rate was admittedly large, but it was the only hope of relief, and if death occurred from the operation society had not lost a valuable citizen.

Dr. B. Sachs, of New York, read a paper on "The Surgical Treatment of Epilepsy," in which he called attention to the fact that operations for this condition were by no means so frequent in New York City as they had been a few years ago. Surgical interference, in his opinion, was only justifiable in the earliest stages, before degeneration had taken place. It was not sufficient to remove the outer table of the skull, for there might be an exostosis or a spicule of bone within. As children were not very tolerant of operations on the skull, this fact narrowed the field of operations done for the relief of birth palsies.

Dr. George Woolsey, of New York, in reporting the results of his experience with operations for epilepsy, said that only one case out of a total of eight could be really called a cure. The operation had only been undertaken in cases in which there had been a severe traumatism of the skull, and after persistent medical treatment had failed to check the mental decline. The speaker favored the use of carver's chisels in doing the operation by the bone-flap method.

Dr. Willy Meyer, of New York, described two cases in which he had used a plate of celluloid to cover up the defect in the skull. He considered this to be the best material yet proposed for this purpose.

Dr. Joseph Collins thought that the discussion thus far had presented an unwarranted narrowing of the field of brain surgery. He called attention to the frequency of cases of purulent infiltration

of the brain resulting from chronic purulent otitis—a condition in which nothing but operation was of avail.

Dr. Floyd S. Crego, of Buffalo, said that he had supposed until he had heard Dr. Dana's rather flippant explanation of the *rationale* of craniectomy, that this operation produced its beneficial effect by improving the nutrition of the brain. Surgeons too often failed to continue the medical treatment after the operation.

Dr. E. B. Angel said that there was no necessity for inserting plates of celluloid or other foreign material, as the defect was filled up by nature with a dense fibrous tissue.

Apparent Contagion of Psoriasis.—In spite of the seeming success of Destot's inoculations, the contagiousness of psoriasis has not been accepted. Dr. Meneau (*Journal de Médicine de Bordeaux*, December 15, 1895) relates a case in which a psoriasis in a girl of eight years was followed after three years of existence by the same disease upon the scalp of a younger sister who had been in the habit of using the first patient's comb.—*Med. Rec., 1896, xlix, 123.*

Alteration of Milk by Boiling.—Professor Rubner points out that when milk is boiled the albumin is coagulated, but not the casein, and that the question whether sterilized milk has been boiled can be determined by separating the casein by addition of salt and warming to 30° or 40° C., then filtering and heating the clear filtrate to the boiling point. If the milk had been previously boiled this filtrate would not contain albumin, but otherwise it will coagulate on heating to the boiling point.—*Hygien. Rundshau, Pharm. J., 1896, iv, 83.*

Diphtheria Toxin.—It is reported by cable from Berlin that Professor Brieger has finally succeeded in freeing the diphtheria toxin from all albuminous compounds. In an article in the July number of the *Zeit. f. Hygie. Infect.*, Professor Brieger stated that as he obtained the toxin more and more nearly in a pure state, the chemical reactions became less and less, and he there stated that he believed these reactions were due to the albuminous compounds thrown down with the toxin and not to the toxin itself. If he has actually obtained toxin in a pure state, he has accomplished an important advance, which may lead to the discovery of methods of separating the toxin, and possibly to manufacture it chemically.—*Med. News, 1896, lxviii, 192.*

Abstracts.

ROENTGEN'S DISCOVERY.

Arthur W. Goodspeed (*Med. News, 1896, lxvii, 169*) says that probably never before has the entire scientific world been simultaneously aroused to such a pitch of excitement as that caused by the recent remarkable discovery of Professor Roentgen, of Würzburg, that it is possible to produce photographic effects through opaque substances such as wood, ebonite, flesh, and similar dense materials, while glass, which we customarily regard as the most transparent of media, obstructs the passage of the cathodal ray.

If we speak of light as that portion of radiation which is capable of affecting the eye, the new agent, or the X-ray, as the discoverer calls them, is certainly not light, and "photographic" is evidently not the word to apply to the effects produced.

As it seems probable that this exhibition of energy is either a form of radiation or is intimately related to it, the term *radiography* might with propriety be applied to the process of producing the impressions.

The earlier reports from abroad indicated that the use of two induction coils was necessary, the secondary of one be connected with the primary of the other, and that a Crookes' "radiant matter" tube be connected with the secondary of the latter. As glass proved comparatively opaque it was deemed advisable to have a small aluminum window in the tube through which the rays could more easily pass. Later experiments, however, prove conclusively that these refinements are not needed, though without them a much longer exposure—perhaps an hour or more—is required. A single induction coil run by a few storage cells will excite an ordinary Crooke's tube quite enough to produce most of the results yet published. The induction coil in its ordinary form is familiar to every practitioner. A much larger coil is needed than is used for physiological stimulation, that which is being used in the experiments at the physical laboratory of the University of Pennsylvania being about 12 inches long and 4½ inches in diameter. It was constructed by Apps, of London, and possesses a primary resistance of about 0.3 ohm and a secondary resistance of about 3,200 ohms. The Crookes' tube represents as complete a vacuum as it is possible to obtain, and is supposed to have an interior pressure of about one-

millionth of an atmosphere. The negative electrode from which the X-rays start is an aluminum disc about a half-inch in diameter. With the apparatus at present used by the writer an exposure of an hour or more was allowed. An ordinary photographic camera is used, having an aluminum shutter, which remains closed. The sensitive plates are entirely inclosed in the photo-holder, which is placed about five inches from the end of the Crookes' tube, in a horizontal position on the table. The subject to be *radiographed* is placed on the cover of the plate-holder. The plates are developed and fixed in the usual manner. Radiograms to any extent may be printed upon any sensitized paper.

ROENTGEN'S DISCOVERY—ITS APPLICATION IN MEDICINE.

Henry W. Cattell (*Med. News, 1896, lxviii, 169*) says that Roentgen's weird and wonderful discovery is destined to enrich medicine with possibly the most valuable diagnostic process which recent years have witnessed. Within a month from Roentgen's first announcement sufficient experiments have confirmed the value of his discovery and have pointed toward applications which, though yet unachieved, only await a development of details similar to that which converted Daguerre's slow, faint and uncertain methods into the instantaneous and brilliant photography of the present day.

In brief, Roentgen has found that the electrical current, passed through a Ruhmkorff coil and thence to a Crookes' vacuum tube, develops from the cathode an invisible form of energy, having the double property of penetrating certain ordinarily opaque substances and of affecting an ordinary photographic plate. Flesh, for instance, is translucent to these rays, and bone and metal, glass and graphite are comparatively impervious. On this difference in penetrability depends the effects which are permanently recorded by ordinary photographic plates. Perfect clearness of definition has not yet been attained. It will be convenient to coin the words "skiagraph" or "skotograph" to characterize pictures produced by the X-rays and to indicate at once their relationship to and their distinction from photographs.

The surgical imagination can pleasurably lose itself in devising endless applications of this wonderful process. If it becomes possible to drive these mysterious rays through the entire body as clearly as they now penetrate the hand, the realm of utility will be practically boundless. It is stated that stone in the kidney has already

been determined, and the opacity of glass has led to the detection of small pieces adherent to bone after accident. The similar opacity of lead may render the probe useless in gunshot wounds, except in rare cases, as when the bullet is buried in the bone. A new means of distinguishing luxations from fractures is now added to the long list at our command. Obstetricians will readily perceive the immense value of ability to *see* the fetus in utero after ossification of its bones has occurred. The representation of deformed pelves in the living subject, of spondylolisthesis, of calcareous infiltration of various parts, such as arteries, and of exostosis—all this opens up a tempting and promising field for practical research.

The easy application of Roentgen's method of taking a picture on a sensitized plate renders its use at once possible in hospitals. The entire cost of such an apparatus need not exceed $50, and this amount will shortly be materially diminished. Doubtless the scientific and commercial ingenuity now being focused on this process will soon produce outfits at once simple, convenient and portable, and it is safe to say that most practitioners will then provide themselves with the means of seeing into the mysterious recesses of the body now accessible only by means of the knife.

METHODS EMPLOYED FOR THE PREVENTION OF THE SALE OF ADULTERATED MILK IN NEW YORK CITY.

Edward W. Martin (*Am. M.-S. Bull., 1896, ix, 101*) describes the methods employed by the Health Board to prevent the sale of adulterated milk and to insure to the consumer in general a good quality of pure milk. The magnitude of the work and the difficulties encountered, likewise, can hardly be appreciated by those unfamiliar with this kind of work.

The purpose of his brief remarks, therefore, was to outline in a general way, without going into every detail, the methods employed, and the difficulties which confront the health authorities and also to give some of the results that have been accomplished.

To enable the Health Board to successfully keep a close watch upon the sale of this important article of food and to detect and prevent its adulteration, the city has been divided into six districts corresponding with the judicial court districts.

The milk inspectors are constantly making their rounds through these districts, testing the milk, in every instance in which there is the slightest suspicion of adulteration or that everything is not just as it should be. The inspectors are required to make a note of the

registration of the thermometer and of the lactometer. The number of the instrument used is also noted. This accomplished, the name of the dealer is secured and noted. The sample tested is then numbered, and the number of the police officer who accompanies the inspector in his rounds is also added to the memorandum for future identification if it is needed.

Two clean bottles are then filled with milk from the sample in question and sealed in the presence of the officer who accompanies the inspector. One of these bottles is placed in the hands of the department chemist of the Health Board, who furnishes the inspector with a receipt for the same. The second bottle, which was taken at the same time and sealed with equal care before the officer, is placed in the hands of the milk dealer, so that he can, if he so desires, have identically the same sample analyzed independently by any chemist that he may select for his own satisfaction.

This method of procedure is a protection to both the Health Board and to the dealer.

Further than this, a record of each dealer in milk throughout the city is accurately kept by the Health Board for ready reference.

THE PRESENT STATUS OF THE USE OF BACTERIAL CULTURES FOR THE DIAGNOSIS OF SUSPECTED DIPHTHERIA.

The making of a true diagnosis in every case of suspected diphtheria is at the present time not only of importance for the public health and for prognosis, but also as a guide to the use of the antitoxin in treatment. That we may judge fairly the exact value and meaning of a bacterial examination let us consider carefully the nature of the information which we derive from the examination of the bacteria on the coagulated blood-serum after a stay of twelve to fourteen hours in the incubator after its inoculation with the throat-secretion or exudate from a suspected case of diphtheria.

The facts upon which the use of cultures for diagnostic purposes is urged are as follows :

1. That in all cases of diphtheria the diphtheria-bacilli are present.

2. That those cases in which the diphtheria-bacilli are absent, not only do not themselves develop the characteristic lesions of diphtheria, but never communicate true diphtheria to others.

3. That many of the less characteristic cases of diphtheria and pseudo-diphtheria are so similar in appearance, symptoms and

duration that it is impossible to separate them by any other means than through cultures.

4. That the throats of many healthy persons who have been in contact with diphtheria or with articles infected with the bacilli become infected, and that although they may never develop diphtheria, yet their throat secretions are equally as dangerous as those of convalescent cases in whose throats the bacilli persist.

5. That the examination of cultures made upon solidified blood-serum under the proper conditions forms, with few exceptions, a reliable method of determining whether the diphtheria-bacilli are present or absent in the suspected throat.

The very nature of the bacterial examination of the growth on the coagulated blood-serum suggests that it must to a certain extent be incomplete.

To be of practical value to the physician the report must be received within twenty-four hours of the time of the making of the culture. This necessitates that the diphtheria-bacilli be differentiated from all other bacteria simply upon the examination of the stained cover-glass preparation from the original serum-tube. Any one who is familiar with bacteriology knows that this is impossible. Very fortunately, however, there are very rarely any other bacilli in the throat which both grow upon blood-serum and have the same staining and morphological characteristics as the diphtheria-bacilli.

This practically excludes the error of confusing the virulent diphtheria-bacilli with any other bacteria except two forms—the so-called pseudo-diphtheria-bacilli and the non-virulent bacilli.

The pseudo-diphtheria-bacilli present sufficient peculiarities to be separated from all but a few of the forms of the less characteristic diphtheria-bacilli. The virulent and non-virulent diphtheria-bacilli present, however, identical appearances and cultural peculiarities and can only be separated by animal inoculation.

These non-virulent bacilli are most abundant in those places where diphtheria has long been prevalent, and are, in fact, virulent bacilli which have lost their virulence.

These bacilli, like the pseudo-diphtheria bacilli, are, so far as we know, incapable of causing disease. They exist in about one per cent of the throats of persons living in great cities.

The practical difficulty which the non-virulent bacilli cause in the use of cultures for diagnostic purposes is apparent. If a culture from a suspected throat which presents no characteristic lesions contains bacilli looking like diphtheria bacilli, we cannot positively state whether they are virulent or not. The amount of probability

in any case would depend upon the prevalence of the non-virulent forms in that city or neighborhood. Thus, to give an example:

If there develops in a throat in which non-virulent diphtheria bacilli exist a simple follicular tonsillitis, cultures would contain bacilli identical in growth with the virulent germs, and the report of such an examination would indicate that the case was one of mild diphtheria. The bacilli in this case, however, would still be non-virulent and have no connection with the tonsillitis. Another limitation in the value of cultures is that they show only in the roughest kind of a way how many bacilli are in the secretion of a suspected throat; and, on the other hand, they do not absolutely prove that the bacilli are entirely absent from the upper air passages because they were absent upon the limited portion of mucous membrane touched by the swab.

This is really of great importance in laryngeal diphtheria, for it has been frequently found that the bacilli were at times scant or absent in the pharynx while abundantly present in the larynx and trachea.

To sum up, therefore, we may say that if a culture made under proper conditions contains no bacilli similar to those of diphtheria, it may be concluded that the throat from which it was made contained no diphtheria bacilli, and that the disease was not diphtheria. If, however, the culture contains bacilli having the characteristics of the diphtheria bacilli, we can only conclude, unless we wait for animal inoculation, that the bacilli are in all probability virulent. The degree of this probability in any given case will depend greatly on the history of exposure and the lesions present.

In view of this doubt, wherever possible the virulence of the bacilli in the mildest cases should be tested, and where this is impossible health-departments may find it wise to arrange it so as to allow the physicians themselves to exercise a certain amount of responsibility in determining whether cases which have no characteristic symptoms, and yet show bacilli in their cultures, should be treated as diphtheria or not. Undoubtedly, if this were done, a certain number of mild cases of diphtheria would be freed from strict isolation and some harm result ; but, on the other hand, physicians would more freely seek the aid of cultures in these light cases, and also co-operate more heartily with the health-authorities. Thus in the end many more of the lighter cases of diphtheria would be partially isolated and receive, when necessary, injections of antitoxin for treatment or immunization.—*Editorial, W. H. Park, Med. News, 1896, lxviii, 107.*

DIPHTHERIA ANTITOXIN AS A CULTURE MEDIUM FOR THE DIPHTHERIA BACILLUS.

Some interesting correspondence has been published in the *British Medical Journal* relative to diphtheria antitoxin as a culture medium for the diphtheria bacillus. We (*Times, Reg., 1896, xxxi, 95*) are not surprised at the result of the investigations, proving that serum of any sort will prove an excellent culture medium. It would not have been along the line of sound reasoning to have had it prove otherwise.

The letters in question refer to this fact, having been brought out by Drs. Wright and Semple, of the Netley Army Medical School, and are as follows:

"In the *British Medical Journal* of October 12 I was much exercised in my mind to learn that Drs. Wright and Semple, of the Netley Army Medical School, suggest the use of diphtheria antitoxin as a culture medium for the diphtheria bacillus. I have not had an opportunity of verifying their experiment; but if it is a reliable one I wish to point out that it appears to upset my view of the value of the antitoxin as an antidote to diphtheria poisoning. I have always understood, although I may be open to correction, that the antitoxin contained a something—possibly a ferment—which, when introduced into the body of a patient suffering from the disease, effectually prevented the subsequent growth of the Klebs-Loeffler bacillus. If this is not so, what is the use of the injection? I am, etc., W. A. Hollis."

"In reply to the letter of Dr. W. A. Hollis, in the *British Medical Journal* of November 9, respecting the employment of diphtheria antitoxin serum as a medium for cultivating the diphtheria bacillus, I may say that I have made trial of Drs. Wright and Semple's method with satisfactory results. Three inoculations were made as directed from membrane expelled from the trachea of a severe case of diphtheria in a boy, aged 5 years, which proved fatal on the fifth day, after tracheotomy and two antitoxin injections. At the end of twenty-four hours colonies had developed at the sites of inoculation, and these showed, on microscopical examination, crowds of short and long bacilli, with cocci. One little detail may be added to Drs. Wright and Semple's directions: the bottle can be kept at practically body heat during the daytime by carrying it beneath the waistcoat as they describe, but what is to be done at night? I placed the bottle in my axilla, secured by a string round the neck.

"I take it that the antitoxic serum serves in this capacity simply as a culture medium, any special properties which it possesses being

destroyed by the heat applied to produce coagulation. I am, etc., H. W. Webber."

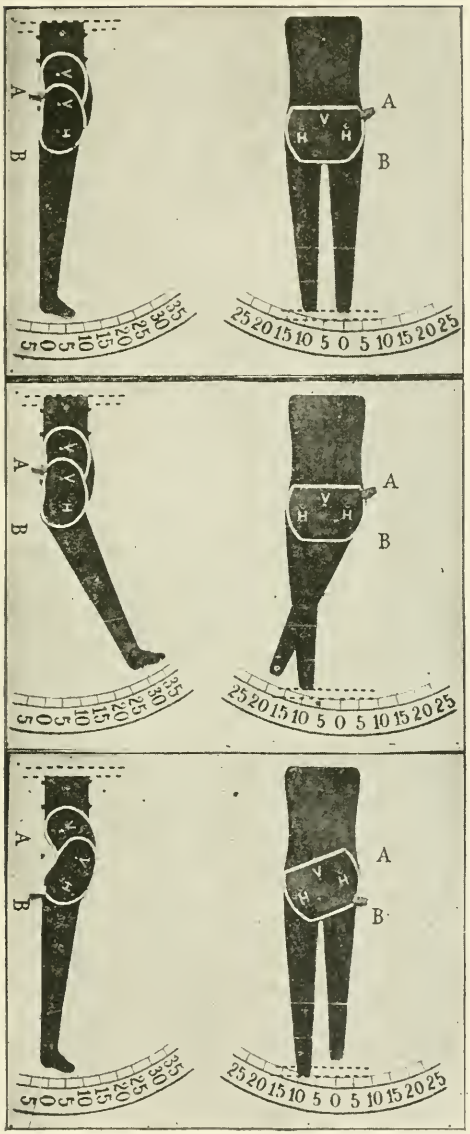
"Your correspondent, W. A. Hollis, in reality proposes to Dr. Semple and myself the following dilemma: either (1) the injections of anti-diphtheritic serum may be useless, and, if so, the antitoxic serum may be a good cultivation material, for injections of anti-diphtheritic serum are useful, and then it must follow on a priori principles that the diphtheria bacillus will not grow on antitoxic serum.

'The only way of dealing with such an argument is to show that there is another possible alternative which we have no a priori reasons for rejecting. The alternative in question is that the injections of antitoxic serum may be useful, even though the antitoxic serum possesses no bactericidal power whatever. Now, since this is a proposition which probably every bacteriologist is concerned to maintain, it may be well to show that its acceptance does not involve us in any contradictions. The matter will probably become perfectly clear to the reader if he will consider and compare the two following series of propositions: (1) Alcohol is produced by the yeast plant. The absorption of that alcohol into the system constitutes an 'alcohol intoxication.' Certain drugs, such as opium or bromide of potassium, do to some extent neutralize the effects of that 'alcohol intoxication.' A sugar solution constitutes an excellent culture medium for the yeast plant. (2) Diphtheria toxin is produced by the diphtheritic bacillus. Absorption of diphtheria toxin into the system constitutes the 'diphtheria intoxication.' Diphtheria antitoxins neutralize the effects of that 'diphtheria intoxication.' Serum is a good cultivation medium for the diphtheria bacillus.

"Now, we are evidently no more entitled to infer a priori from the one series of facts that the presence of 'antitoxins' in the serum would render it a bad culture medium for the diphtheria bacillus than we are entitled to infer a priori from the other series of facts, that the presence of opium or bromide of potassium in a sugar solution would render that sugar solution a bad culture medium for the yeast plant. In both cases the question is simply a question for experiment. I am, etc., A. E. Wright."

MECHANISM TO ILLUSTRATE THE DEFORMITIES OF HIP DISEASE.

Dr. A. B. Judson exhibited the mechanism shown in the cut to illustrate the deformities of hip disease. The models are constructed to imitate the motions of the hip and the vertebral column in health and as affected by anchylosis. The images are cut out of


A
B
V
H
25 20 15 10 5 0 5 10 15 20 25

pasteboard and are pivoted to the background at V in the full figure and at H in the profile. The joints are made of loose eyelets. The limb is first adducted and then anchylosis is imitated by applying the spring-clip (a scarf-retainer), which binds together the piece representing the pelvis and that representing the femur. When the limb is now made parallel with the axis of the figure apparent shortening is produced. In a similar manner may be illustrated the production of apparent lengthening by abduction. Referring now to the profile the limb is first flexed and anchylosis simulated by applying the clip to the pieces representing the pelvis and the femur. When the limb is then brought down to the table the lumbar region of the spine is arched. The dotted lines prove that adduction as shown in the full figure increases the stature, while flexion as shown in the profile decreases it.

NEPHRECTOMY FOR DISPLACED KIDNEY AND HYDRONEPHROSIS.

Dr. McBurney presented before the New York Surgical Society (*Annals Surg., 1896, xxiii, 183*) a boy, fourteen years old, who was admitted to the Roosevelt Hospital on September 8, 1894. During the preceding year he had had a number of attacks (twelve or more) of nausea, prostration, and hypogastric pain. Each attack lasted three or four days, during which time an intra-abdominal hypogastric tumor was present. When the tumor disappeared all symptoms were relieved at once. On admission to the hospital no tumor existed, but slight tenderness on pressure over the lower abdomen was noted.

On September 11, a tumor, firm and round, about three inches in diameter, occupying the median line just below the umbilicus, was noted. It was dull on percussion. The next day Dr. Hartley operated, making a long median incision and uncovering a post-peritoneal tumor which rose to the anterior abdominal wall. The tumor was clearly made out to be cystic, but its exact origin could not at that time be made out, and as the surrounding wall was exceedingly vascular, it was incised, and the edges of the incision were sewed to the edges of the abdominal wound. A pint of clear yellow fluid was evacuated. No communication between the interior of the cyst and any viscus could be demonstrated. The fluid was subsequently shown to be urine. The patient made a good recovery, the opening remaining, however, and continuously discharged urine.

Attempts to show the connection between the cyst and the bladder were made with methyl-blue, but without success. To determine the exact nature of the cyst and to examine the surrounding

parts, Dr. McBurney made a free incision in the left linea semilunaris into the peritoneal cavity. Through this incision the fingers could determine the outline of a kidney lying posterior to the cyst-wall and intimately connected with it. In the same manner the absence of the left kidney from its normal position was ascertained. The conclusion was that he had to deal with a displaced cystic kidney, and that the urinary fistula and cyst could be cured only by nephrectomy. He did not think it wise to do this operation at that time, and so closed the lateral wound, which healed primarily.

On June 5, 1895, operation was begun with a view of removing the cyst-wall and kidney together. The cyst was first washed out and then packed with gauze. The fistulous opening was closed by suture and the belly-wall resterilized. A median incision from the umbilicus downward and encircling the fistulous opening was made and the peritoneal cavity opened. Numerous firm adhesions were torn or tied. After some dissection the renal artery and vein were found entering the tumor at its posterior edge behind the cyst. These were tied and cut. The cyst could now be clearly made out to be the dilated pelvis of the kidney, the mass of which hung deeply into the pelvis of the patient. Crossing in *front* of the kidney itself, between it and the anterior abdominal wall, was the short ureter. Doubtless this position of the ureter accounted for its occasional obstruction and for the distention of the pelvis of the kidney. Division, after ligature, of the ureter followed, and it was then not difficult to remove the kidney, cyst, and fistulous tract in one mass. The abdominal wound was partly closed by suture and partly packed and drained.

No interruption to recovery followed, and the patient has remained perfectly well. Excluding a congenital condition, as symptoms did not appear until the eleventh year, the condition existing in this boy can only be accounted for on the supposition that the left kidney was displaced downward in such a manner that its lower end passed *behind* the ureter. When operated upon, the body of the kidney lay across and within the pelvis of the patient. The renal vessels entered the hilum just opposite the last lumbar vertebra, and the ureter passed from the distended pelvis of the kidney across the anterior face of it to the bladder.

Dr. Kammerer said that from the nature of the attacks he should assume Dr. McBurney's case to have been one of intermittent hydronephrosis. It certainly seemed to prove that a movable kidney was most frequently the primary cause of retention in the pelvis, and that valve-formation at the junction of the ureter and pelvis of

the kidney and twisting of the ureter or kinking were probably secondary to displacement of the organ. He had shown at a previous meeting of the Society a specimen of hydronephrotic kidney, which he had obtained from a young woman of twenty, who had also begun to suffer from such attacks as Dr. McBurney described, in her sixteenth year. They had increased in frequency, and were accompanied, when the patient was seen by the speaker, by the formation of a tumor the size of a child's head, which was situated mainly in the false pelvis, but could be discovered by bimanual palpation from the lumbar region also. It gradually disappeared after the attacks. The tumor was removed by a lumbar incision, and was found to be the kidney, pelvis and kidney proper being distended into one large sac. There was very little kidney substance left.

TUBERCULOSIS OF THE TESTICLE IN EARLIEST INFANCY.

Comby (*La Medicine Infantile, 1895, xii, 678*) presents two cases; in one, tuberculosis of the left epididymis began in a 14 months old child, which soon after developed a left cervical adenitis and a white swelling of the left ankle. The testicle when examined was hard and nodular, the swelling was indolent, and the skin was not adherent. Under proper hygiene all these affections practically disappeared in one year, but after about six months of comparative health a tubercular meningitis developed which resulted fatally. In the second case both testicles became suddenly affected in a rachitic boy four years old with a tubercular family history. Examination showed that there was a double epididymitis, probably old, with a subacute orchitis of recent origin. The scrotum was red and edematous and there was an effusion into the tunica vaginalis. The subsequent history was unknown. Note is also made of Jullien's 20 cases; of these, 6 were less than a year old; 6 from one to two years of age, and 8 from two to three years. The left testicle was oftener affected than the right.

Tuberculosis from Milk.—Two butter-makers and the son of Allen Devereaux, whose tuberculous herd of dairy cows was recently destroyed, have contracted the disease. As all were large partakers of the diseased milk, there can be little doubt as to the source as well as the method of their infection.—*Med. News, 1896, lxviii, 158.*

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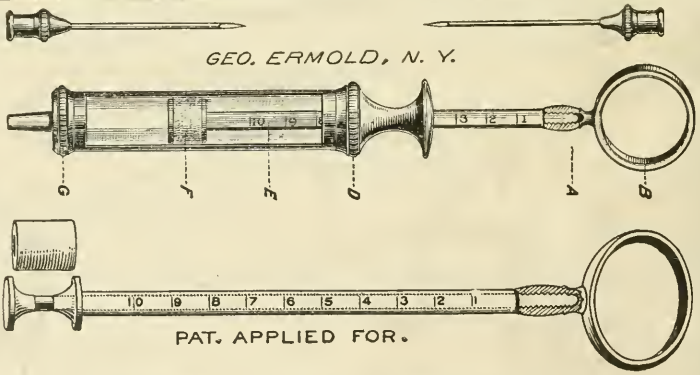

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